

THE LOCALITIES OF T. L. MEAD'S COLLECTION OF BUTTERFLIES FROM COLORADO IN 1871

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During the summer of 1871, Theodore L. Mead accompanied the Denver party of the Wheeler Survey as a collector. The material he gathered was determined and described by his father-in-law William H. Edwards and by Samuel H. Scudder. Most of the original descriptions give the type localities merely as "Colorado." At the present state of taxonomy it is necessary to have more precise localities in a state that varies as much as Colorado—ranging from Sonoran to Alpine fauna. One of the tasks before us is to determine more accurately, if possible, the localities visited and the species collected by these early collectors in this state.

After thoroughly studying Mead's report and the reports of the various officers for the year of 1871, I find that it is possible to designate with accuracy the localities for Edwards' types in all cases but three, *Argynnis alcestris*, *Phyciodes camillus* and *Phyciodes emissa*. In the case of four species, *Anthocharis julia*, *Argynnis meadi*, *Cercyonis charon* and *Cercyonis meadi* Edwards states the type localities precisely. For the remaining seventeen species I have been able to allocate type localities. In order to do so, it has been necessary to arrange a schedule of Mead's travels for the summer, map the old stage routes and know the present ranges of the various species in the region traversed by Mead. Nowhere have I been able to find an itinerary of Mead in published form. I have built my schedule of his travels from his notes under the various species in his reports. In these he gives definite localities for thirty-odd days between June 1st and September 20th. Knowing approximately how fast he could travel in a day, it has been not a difficult task to map his progress with some measure of accuracy.

Apparently Mead collected around Denver during the first few days in June, probably leaving there June 5th and travelling about twenty miles to the junction of Turkey Creek and South

Turkey Creek, where he collected on June 5th and 6th. The next definite date is the tenth at Fairplay, about 65 miles southwest. Since half of the route lay through the rugged foothills, it is probable that the journey took two and a half to three days. In the saddle it could be done in two days of steady riding. He probably arrived in Fairplay sometime on the ninth. Here he stayed about 10 days, dividing the time between collecting in the vicinity of Fairplay and South Park. On June 20th he collected in the latter locality, and on the twenty-third was back at Turkey Creek Junction, where he collected on that day and the succeeding ones. He then turned back toward Fairplay and collected at Kenosha House on the twenty-ninth. This is about two days' ride from Turkey Creek Junction, so that he must have left there no later than the morning of the twenty-seventh. It may be that between the twenty-fourth and the twenty-seventh he journeyed to headquarters (Denver) and back again. He had ample time to do so. The next place and date that we have is the divide between the Arkansas and the South Platte on July 8th. At that time there were two routes over the divide toward Twin Lakes, the next stop. One via Western Pass, the other via Mosquito Pass. Each crosses the Mosquito Range or, as it is sometimes called, the South Park Range. They are about ten miles apart. A lead in the discussion under *Colias meadi* makes it certain that the journey was made over Mosquito Pass. Mead states that he collected the specimens on the divide between Fairplay and California Gulch. California Gulch is at the west foot of Mosquito Pass and Western Gulch at the west foot of the pass bearing that name. He spent the next 10 days in the vicinity of Twin Lakes collecting there, on the prairies to the south and east, and on La Plata Peak and Mt. Elbert. Though he does not name these mountains his descriptions are sufficient to clinch their identities. As a matter of fact, at that time I believe they were nameless. On the nineteenth or twentieth he left this region and went back over the same pass, collecting at the summit on July 21st and 22d. From there he went back to Denver, arriving there at the close of the month. Although there is nothing said about a return to Denver, he next journeyed to Georgetown. The most feasible route there led through Denver.

It is probable that before leaving the Fairplay region he climbed Mt. Lincoln and collected the Mt. Lincoln specimens about July 25th. From the fact that he first took *C. meadi* on Mosquito Pass and later on Mt. Lincoln eliminates his working that mountain at the earlier stay in Fairplay, and his next return was too late in the season for the species. His arrival at Denver may be set about the twenty-ninth or thirtieth. From there he set out for Georgetown via Central City and collected on August 3d in Apex Gulch south of the present mining town of Apex. He must have arrived at Georgetown on the fourth, since he climbed and collected on Grey's Peak the next day. He spent about 10 days in the region of Georgetown. On the sixteenth he collected on Clear Creek near Berthoud Pass, probably spending two days on that stream. The next definite point we have is Idaho Springs on the nineteenth. The following day he was near Denver, and we may take it that he visited that city for several days. He now turned back to the South Park region. Since he arrived at Bailey's Ranch on the twenty-sixth, he left Denver no later than the twenty-fourth. Here he stayed until September 2d. The next date we have is September 20th in Canon City. He may have

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<i>Locality</i>	<i>County</i>	<i>Topographic Sheet</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Altitude</i>
Apex Gulch.....	Gilpin.....	Central City...	39 51' N	105 34' W	9200'-9900'
Bailey's Ranch....	Park.....	Platte Cannon..	39 25' N	105 29' W	7900'
Berthoud Pass....	Clear Creek and Grand.....	Fraser.....	39 48' N	105 45' W	11200'
Beaver Creek.....	Park.....	Leadville.....	39 15' N	106 00' W	9500'-12000'
California Gulch..	Lake.....	Leadville.....	39 14' N	106 15' W	10000'-11000'
Fairplay.....	Park.....	None.....	39 11' N	105 55' W	9500'
Georgetown.....	Clear Creek.....	Georgetown....	39 42' N	105 42' W	8500'
Gray's Peaks.....	Summit and Clear Creek.....	None.....	39 24' N	105 55' W	14341'
Idaho Springs.....	Clear Creek.....	Georgetown....	39 44' N	105 31' W	7600'
Kenosha (House)..	Park.....	None.....	39 20' N	105 45' W	9000'
LaPlata Peak.....	Chaffee.....	Leadville.....	39 00' N	106 25' W	14332'
Mt. Elbert.....	Lake.....	Leadville.....	39 07' N	106 26' W	14430'
Mt. Lincoln.....	Park.....	Leadville.....	39 21' N	106 07' W	14297'
Mosquito Pass....	Park and Lake...	Leadville.....	39 17' N	106 11' W	13188'
Twin Lakes.....	Lake.....	Leadville.....	39 05' N	106 20' W	9300'
Turkey Creek Jct..	Jefferson.....	Denver Mt. Parks.....	39 36' N	105 13' W	6900'

gone back to Denver and down via Colorado Springs, but I believe not. He mentions that two weeks before the twentieth, frosts had stopped the collecting in South Park. That would indicate that he probably worked from Bailey's on into the Park and south through the present towns of Hartzel, Howbert and Cripple Creek to Canon City and Pueblo. I believe that Pueblo was the disbanding point for the year of 1871.

Although there is considerable surmise in the above itinerary, it is hung on a mesh of fact and an intimate knowledge of the region. Mead's personal journal, if in existence, could set its inaccuracies aright.

COLORADO TYPE LOCALITIES OF EDWARDS' SPECIES COLLECTED BY MEAD

Anthocharis Julia Edwards. Trans. Amer. Ent. Soc. IV, March, 1872, pp. 61-63. Mead, Report of the Wheeler Survey V, Chap. VIII, p. 748, 1875.

Taken in the woods and on the banks of the Beaver Creek near Fairplay, Park Co., altitude 9500 feet, on June 12-14, 1871, according to Mead, or June 9-11, according to Edwards.

Colias meadi Edwards. Trans. Amer. Ent. Soc. III, March, 1871, pp. 267-268. Mead, Wheeler Survey, p. 750.

There is something curious about the date of publication of this description. The signature is dated March, 1871, on page 269. However, in the description of *A. olympia* on page 267, Edwards states that the specimen described was taken in April, 1871, and that the next specimen of *A. olympia* came from Texas. The March dating is rather puzzling unless the Transactions was post-dated by several months. If so, is the *meadi* material from the Wheeler Survey or not? I believe that the Wheeler Expedition was Mead's first Colorado collecting. Although Edwards does not acknowledge Mead as the collector of the type specimens, as he usually does, the fact that he used Mead's name is rather strong evidence that he was the collector. If the Wheeler Survey material is the type series, then the type locality is with very little doubt Mosquito Pass. Mead in his report states that it was collected first on July 8th on the Arkansas divide between

Fairplay and California Gulch. In addition, material was taken on Mt. Lincoln (July 25th?) and Grey's Peak August 5th.

Argynnis alcestis Edwards. Trans. Amer. Ent. Soc. V, December, 1876, pp. 289-291. Mead, Wheeler Survey, p. 752 (*A. aphrodite*).

Neither Edwards nor Mead gives us any light upon the precise locality of the Colorado types. They may have come from any of the localities below 9500 feet and above 6500 feet from data I have on its distribution.

Argynnis halcyone Edwards. Butt. N. A. 1, 81, p. 28. Mead, Wheeler Survey, p. 754.

Southern border of South Park, Park Co., probably early in September along the road from Hartzel east to Howbert. The altitude varies a few feet above 7600 feet. A great area of marsh lands that constitute the southwestern headwater of the South Platte. A female from Cañon City, Fremont County, September 20th, altitude about 5400 feet on the Arkansas River as it leaves the Royal Gorge. Cañon City is on the topographic sheet of the same name. No sheets have been issued of the South Park region.

Argynnis meadi Edwards. Trans. Amer. Ent. Soc. IV, March, 1872, pp. 67-68. Mead, Wheeler Survey, p. 755.

Taken at Turkey Creek Junction, Colorado, June 6, 1871. There are several score Turkey Creeks in Colorado. By arranging a time table of the definite localities tied to definite dates, I have come to the conclusion that the stream in question is the Turkey Creek just south of Morrison, near Denver. The precise locality of the female type is probably the junction of South Turkey Creek with Turkey Creek, a few miles up in the foothills.

Argynnis eurynome Edwards. Trans. Amer. Ent. Soc. IV, March, 1872, pp. 66-67. Mead, Wheeler Survey, pp. 755-756.

The type series came from Fairplay, South Park, Middle Park and California Gulch in 1871. From what I know of its distribution, I doubt if any of the specimens were taken much under 9000 feet, which centers the type locality about Fairplay, Leadville, and Dillon, covering both slopes of the Continental Divide in the vicinity of Hoosier Pass. Edwards broadly states that Mead found it common throughout Colorado; Mead restricts its

range in his notes to the four localities mentioned and adds Twin Lakes for the season of 1873.

Argynnis artonis Edwards. Trans. Amer. Ent. Soc. IX, February, 1881, pp. 1-2. Mead, Wheeler Survey, pp. 755-756 (*eurynome* in part).

Mead mentions a single specimen of *eurynome* lacking the silvery spots from California Gulch, Lake Co. Edwards mentions that Mead took three or four specimens in 1872, of which Mead makes no mention. So California Gulch may be taken as the locality of the Colorado type.

Brenthis helena Edwards. Trans. Amer. Ent. Soc. III, March, 1871, p. 268. Mead, Wheeler Survey, p. 757.

Although Mead gives no definite locality, several things that he states in his notes confine the type locality of this species to the same region as that of *Colias meadi*. Two statements are indicative: "It inhabits the highest peaks," and "until the first of August." From the schedule of his collecting it will be seen that during July he collected in the region of the range north and west of Fairplay and about Twin Lakes. He mentions climbing a mountain in the region of Twin Lakes that sounds very much like Mt. Elbert, the highest in the state. It is quite probable that his specimens come from Mt. Elbert, Mosquito Pass, Mt. Lincoln and Hoosier Pass.

Militea eurytion Edwards. MSS. Mead, Wheeler Survey, p. 759.

Mead does not give us anything definite about the localities in which he collected this species. He states that it was found with *nubigena*. That species he found common in the mountain areas during June and July. I have found the species in the mountains up to tree line (11,500-11,800) during these months. From this I should place the type localities as Twin Lakes, California Gulch, Fairplay and probably Kenosha. Probably not at Turkey Creek Junction.

Militea calydon Edwards. MSS. Mead, Wheeler Survey, p. 760. Turkey Creek Junction, Jefferson Co., 6900 feet, June 20-30, 1871.

Phyciodes camillus Edwards. Trans. Amer. Ent. Soc. III, March, 1871, pp. 268-269. Mead, Wheeler Survey, p. 764.

Nothing definite is possible concerning the type localities of this species.

Phyciodes emissa Edwards. Trans. Amer. Ent. Soc. III, March, 1871, pp. 269-270. Mead, Wheeler Survey, p. 763 (a note in the discussion of *P. mata* Reakirt).

The same as *P. camillus*.

Grapta hylas Edwards. Trans. Amer. Ent. Soc. IV, March, 1872, pp. 68-69. Mead, Wheeler Survey, p. 768.

The first specimens were taken August 16, 1871, near Berthoud Pass, with little doubt on the southern slope. The others of the type series from a point about 20 miles from South Park on the South Park road, August 28, 1871. This would be about half way between the present towns of Bailey and Kenosha.

Satyrus charon Edwards. Trans. Amer. Ent. Soc. IV, March, 1872, p. 69. Mead, Wheeler Survey, p. 773.

First taken near Twin Lakes, Lake Co., on July 9th. Later both in South and Middle Parks. The elevation given by Edwards, 8000 feet, is a little low. The topographic sheet shows Twin Lakes as 9300 feet and the surrounding plains to the Arkansas River drop to about 9000 feet.

Satyrus meadii Edwards. Trans. Amer. Ent. Soc. IV, March, 1872, p. 70. Mead, Wheeler Survey, p. 774.

The entire type series was collected at Bailey's Ranch on the South Park road. This is now the town of Bailey, Park Co.

Erebia rhodia Edwards. (*Erebia epipsodea* Butler). Trans. Amer. Ent. Soc. III, March, 1871, pp. 273-274. Mead, Wheeler Survey, p. 775.

Type locality Fairplay.

Erebia tyndarus callias Edwards. Trans. Amer. Ent. Soc. III, March, 1871, p. 274. Mead, Wheeler Survey, pp. 775-776.

The type localities for this race appear to be the same as for *Colias meadi*, and in addition probably Mt. Elbert and LaPlata Peak just to the south of it.

Thecla ninus Edwards. Trans. Amer. Ent. Soc. III, March, 1871, p. 270. Mead, Wheeler Survey, p. 778.

"Taken on willow blossoms on the South Park road four miles from the park on the seventeenth of June," 1871. This places the type locality near Kenosha.

Chrysophanus sirius Edwards. Trans. Amer. Ent. Soc. III, March, 1871, p. 270. Mead, Wheeler Survey, p. 781.

Twin Lakes is the locality of the major portion of the type series. They were taken July 12 and 13, 1871. Three other localities are mentioned, Mt. Lincoln, South Park and Middle Park.

Lycæna melissa Edwards. Trans. Amer. Ent. Soc. V, 1873, pp. 347-348. Mead, Wheeler Survey, p. 783, Plate 36, Figs. 5-8.

Edwards states that the type series from Colorado were taken during 1871. Mead gives Fairplay as the probable locality for the 1871 series.

Lycæna daunia Edwards. Trans. Amer. Ent. Soc. III, March, 1871, p. 272. Mead, Wheeler Survey, p. 785.

Turkey Creek, Jefferson Co., Colorado, last week in June, 1871.

Lycæna alce Edwards. Trans. Amer. Ent. Soc. III, March, 1871, pp. 272-273. Mead, Wheeler Survey, p. 783 (*L. isola* Reakirt).

Turkey Creek, Jefferson Co., late in June, and Georgetown, Clear Creek Co., middle of August.

Polites draco Edwards. Trans. Amer. Ent. Soc. III, March, 1871, pp. 274-275. Mead, Wheeler Survey, p. 790.

Mead mentions three localities from which *draco* was taken by the Wheeler Survey. Of them, only one is in Colorado—Twin Lakes. Edwards' original description mentions only Colorado. So the type locality is definitely fixed as Twin Lakes, Lake Co., Colorado.

Thymeticus hylax Edwards. Trans. Amer. Ent. Soc. III, March, 1871, p. 274. Mead, Wheeler Survey, p. 788 (*Oarisma garita*).

Mead's material was taken in South Park and at Twin Lakes, Colorado.

Two manuscript names of Edwards, *M. eurytion* and *M. calydon*, are used by Mead. Edwards does not list either of them in his catalogue of February, 1877.